



Installation Instructions

Trane Vibration Monitor



This document applies to service offering applications only.

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⚠ SAFETY WARNING

Only qualified personnel should install and service the equipment. The installation, starting up, and servicing of heating, ventilating, and air-conditioning equipment can be hazardous and requires specific knowledge and training. Improperly installed, adjusted or altered equipment by an unqualified person could result in death or serious injury. When working on the equipment, observe all precautions in the literature and on the tags, stickers, and labels that are attached to the equipment.



Introduction

Read this manual thoroughly before operating or servicing this unit.

Warnings, Cautions, and Notices

Safety advisories appear throughout this manual as required. Your personal safety and the proper operation of this machine depend upon the strict observance of these precautions.

The three types of advisories are defined as follows:



WARNING

Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



CAUTION

Indicates a potentially hazardous situation which, if not avoided, could result in minor or moderate injury. It could also be used to alert against unsafe practices.

NOTICE

Indicates a situation that could result in equipment or property-damage only accidents.

Important Environmental Concerns

Scientific research has shown that certain man-made chemicals can affect the earth's naturally occurring stratospheric ozone layer when released to the atmosphere. In particular, several of the identified chemicals that may affect the ozone layer are refrigerants that contain Chlorine, Fluorine and Carbon (CFCs) and those containing Hydrogen, Chlorine, Fluorine and Carbon (HCFCs). Not all refrigerants containing these compounds have the same potential impact to the environment. Trane advocates the responsible handling of all refrigerants.

Important Responsible Refrigerant Practices

Trane believes that responsible refrigerant practices are important to the environment, our customers, and the air conditioning industry. All technicians who handle refrigerants must be certified according to local rules. For the USA, the Federal Clean Air Act (Section 608) sets forth the requirements for handling, reclaiming, recovering and recycling of certain refrigerants and the equipment that is used in these service procedures. In addition, some states or municipalities may have additional requirements that must also be adhered to for responsible management of refrigerants. Know the applicable laws and follow them.

⚠ WARNING

Proper Field Wiring and Grounding Required!

Failure to follow code could result in death or serious injury.

All field wiring **MUST** be performed by qualified personnel. Improperly installed and grounded field wiring poses **FIRE** and **ELECTROCUTION** hazards. To avoid these hazards, you **MUST** follow requirements for field wiring installation and grounding as described in NEC and your local/state/national electrical codes.

⚠ WARNING

Personal Protective Equipment (PPE) Required!

Failure to wear proper PPE for the job being undertaken could result in death or serious injury.

Technicians, in order to protect themselves from potential electrical, mechanical, and chemical hazards, **MUST** follow precautions in this manual and on the tags, stickers, and labels, as well as the instructions below:

- Before installing/servicing this unit, technicians **MUST** put on all PPE required for the work being undertaken (Examples; cut resistant gloves/sleeves, butyl gloves, safety glasses, hard hat/bump cap, fall protection, electrical PPE and arc flash clothing). **ALWAYS** refer to appropriate Safety Data Sheets (SDS) and OSHA guidelines for proper PPE.
- When working with or around hazardous chemicals, **ALWAYS** refer to the appropriate SDS and OSHA/GHS (Global Harmonized System of Classification and Labelling of Chemicals) guidelines for information on allowable personal exposure levels, proper respiratory protection and handling instructions.
- If there is a risk of energized electrical contact, arc, or flash, technicians **MUST** put on all PPE in accordance with OSHA, NFPA 70E, or other country-specific requirements for arc flash protection, **PRIOR** to servicing the unit. **NEVER** PERFORM ANY SWITCHING, DISCONNECTING, OR VOLTAGE TESTING WITHOUT PROPER ELECTRICAL PPE AND ARC FLASH CLOTHING. ENSURE ELECTRICAL METERS AND EQUIPMENT ARE PROPERLY RATED FOR INTENDED VOLTAGE.

⚠ WARNING**Follow EHS Policies!**

Failure to follow instructions below could result in death or serious injury.

- All Trane personnel must follow the company's Environmental, Health and Safety (EHS) policies when performing work such as hot work, electrical, fall protection, lockout/tagout, refrigerant handling, etc. Where local regulations are more stringent than these policies, those regulations supersede these policies.
- Non-Trane personnel should always follow local regulations.

⚠ WARNING**Cancer and Reproductive Harm!**

This product can expose you to chemicals including lead and bisphenol A (BPA), which are known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

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General Information

About This Manual

This installation manual outlines the proper method for installing the Trane Vibration Monitor on a Trane CenTraVac® (CVHE, CVHF, CVHH), and also discusses accessing the vibration data for continuous monitoring.

Overview

The Trane Vibration Monitor is a connected service solution designed to help customers identify developing equipment issues before they result in unexpected failures. By continuously monitoring compressor motor vibration on centrifugal chillers, the solution provides real-time insight into equipment condition and supports proactive maintenance decisions.

As part of Trane's connected services strategy, the Trane Vibration Monitor helps customers reduce risk, improve reliability, and extend equipment life through continuous condition monitoring and early fault detection.

Note: This product requires Symbio 800 controls to operate the Trane Vibration Monitor.

Connected Mechanical Service Agreement

For additional information about Symbio 800, please visit:

https://hub.tranetechnologies.com/docs/DOC-211612#jive_content_id_Connecting_to_theTrane_Cloud_Symbio_800

Table 2. Trane vibration monitor kit contents

Description	CTV Simplex	ECTV Simplex	CTV Duplex	ECTV Duplex
Kit; Vibration Sensor, Simplex (1 pcs sensor, 1 pcs cable, 1 pcs edge controller)	1	1	0	0
Kit; Vibration Sensor, Duplex (2 pcs sensors, 2 pcs cables, 2 pcs edge controllers)	0	0	1	1
Kit; Communication Symbio CM 2	1	1	1	1
Rail; Din Terminal Block, 35 mm, 7.50 LG	1	1	1	1
Wire- 16 AWG, Red, UL1230, Class C, 105C, VW-1	1	1	2	2
Wire- 16 AWG, Black, UL1230, Class C, 105C, VW-1	1	1	2	2
Terminal; Ferrule, Non-Insulated, 16 AWG, 10 mm	4	4	8	8
Cable; Ethernet RJ45 2M CAT6 IP20/IP67	1	1	2	2
Cable; Ethernet With 90 Degree Connector CAT 6 2M	1	1	2	2
Stud; Double Ended, M5-M12 (CVHH Units Only)	0	1	0	2
Stud; Double Ended, M5-UNC.375 (CVHE and CVHF Units Only)	1	0	2	0
Nut; Customize	1	1	2	2
Nut; M5 X 0.80 Locknut With Polyamid Insert	1	1	2	2

Required Tools

Normal service tools are required to perform most of the work. A service technician with a well-stocked tool chest should have the right tools to perform the job.

In addition to the normal service tools and hardware, the following is a partial list of specific field-supplied hardware components and special tools that are also required to perform the Trane Vibration Monitor installation:

Table 1. Field-supplied tools and hardware

Qty	Description
1	Sockets for M5 and M8 bolts
1	3/8-16 tap (For CVHE, CVHF and CDHF units only)
1	M12 X 1.75 tap (For CVHH units only)
1	1/4- or 3/8-inch torque wrench (30 in-lb setting)
1	#16 (0.1590-in.) drill bit
1	Wire stripper
Many	Tie wraps

Parts List



General Information

Table 2. Trane vibration monitor kit contents (continued)

Description	CTV Simplex	ECTV Simplex	CTV Duplex	ECTV Duplex
Lockwasher; External Tooth; .190 NOM Tooth	4	4	6	6
Screw; Phillips Panhead 0.5-in. Thread Rolling Zinc Plate 10-32	4	4	6	6

Table 3. Installation components

Qty	Description
1	IFM VSM103 vibration sensor
1	Dual-diameter bolt ^(a)

Table 3. Installation components (continued)

Qty	Description
1	Fastening ring
1	Locknut

^(a) 3/8-inch size for CTV; M12 for ECTV

Figure 1. Components

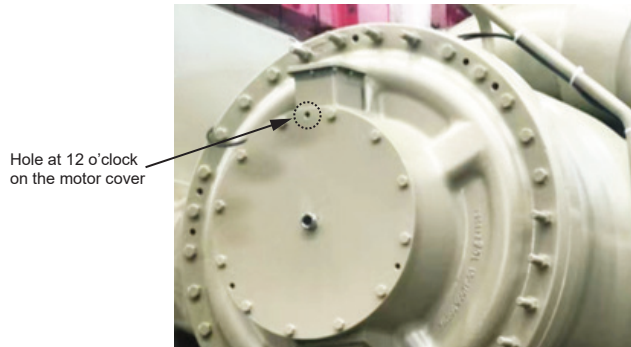


Installation

Installation Location

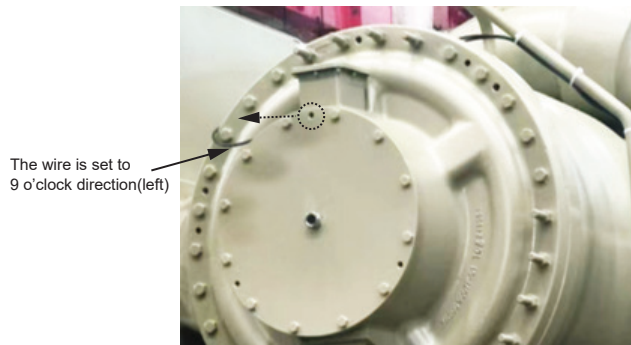
Use the 3/8-16 threaded hole (CVHE and CVHF) positioned at the 12 o'clock direction on the motor cover.

Figure 2. Hole placement



When installation is complete, the sensor wire will be positioned at the 9 o'clock direction (to the left side when facing the sensor).

Figure 3. Sensor wire upon completion



After installation, the X-axis corresponds to the horizontal direction, the Y-axis to the vertical direction, and the Z-axis to the motor shaft direction. See [Figure 4, p. 7](#).

Figure 4. Motor shaft placement



Cleaning Thread Holes Before Mounting Sensor

CVHE, CVHF and CDHF 3/8-16 threads

Note: If the unit is a CVHH, use the M12 X 1.75 double threaded stud and M12 X 1.75 tap for cleaning the threads. Follow the same method for installation.

1. Use the 3/8-16 tap to clean the motor plate threads at the 12 o'clock position. Carefully start the tap by hand first, see [Figure 5, p. 7](#).

Figure 5. Cleaning motor plate threads



2. Once the tap is engaged, use a ratchet wrench to carefully clean the threads with the tap, see [Figure 6, p. 8](#))

Figure 6. Ratchet wrench cleaning



3. Thread the double threaded stud into the motor housing at the 12 o'clock position after the threads have been cleaned with the tap.

Figure 7. Thread stud into motor housing

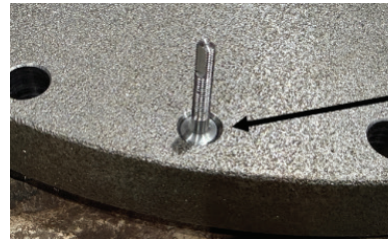


4. Hand tighten and then use a small wrench on the flat spot on the stud and only snug the bolt. Do not overtighten. See [Figure 8, p. 8](#).

Figure 8. Hand-tighten stud



Figure 9. Bolt placement



The protruding part of the bolt should be below the surface of the motor cover.

5. Orient the sensor with the side containing the markings facing away from the motor so the writing on the sensor is visible with the wire facing the 9 o'clock position. Insert it through the M5 mounting hole and confirm it is seated fully and flush against the motor end cover with no lifting or gaps.

Figure 10. Sensor placement



Figure 11. Sensor placement



6. Position the smaller side of the fastening ring toward the hole on the sensor and tighten the fastening ring using an M8 wrench to secure the sensor (tighten it to 30 in-lb also). Maintain the sensor orientation throughout the installation process.

Figure 12. Fastening ring placement



Figure 13. Wrench tighten to secure fastening ring



Figure 14. Fastening ring on sensor



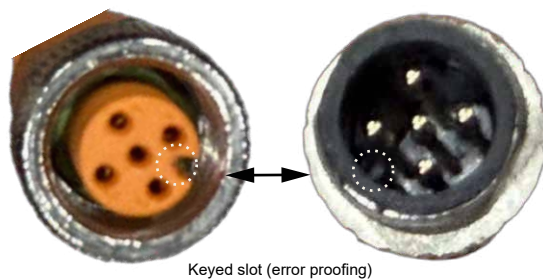
7. Hand thread the M5 lock nut to the stud over the M8 fastening ring. Tighten the locknut using an M5 wrench. Tighten the nut to 30 in-lb to prevent thread damage.

Figure 15. Nut fastening

Figure 16. Tighten lugnut with wrench


Connecting the Sensor Wire

1. After confirming correct alignment with the key control (error proofing) slot, rotate the connecting wire to secure it.

Figure 17. Confirm alignment with key control


2. Connect the sensor wire. Align the connector with the keyed slot (error proofing) and rotate it to fully lock into position.

Figure 18. Connect sensor wire


Figure 19. Lock sensor wire into position



3. Secure it to a low-vibration area of the unit using wire ties.

Figure 20. Secure using wire ties

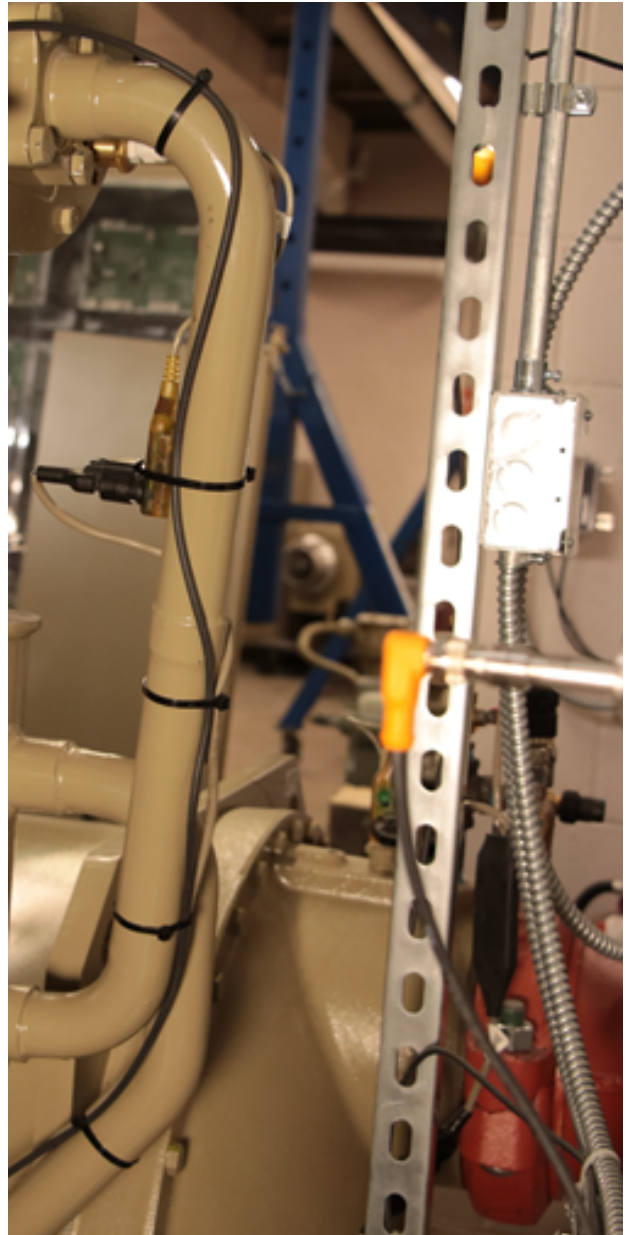
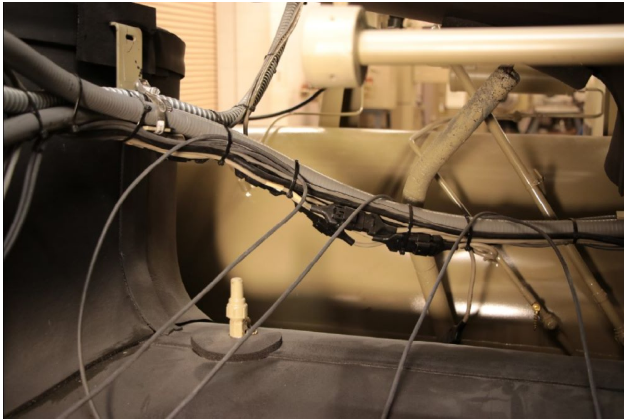


Figure 21. Secure using wire ties


4. Route the cable to the control panel and secure with wire ties.

Shut Down Power

⚠ WARNING

Hazardous Voltage w/Capacitors!

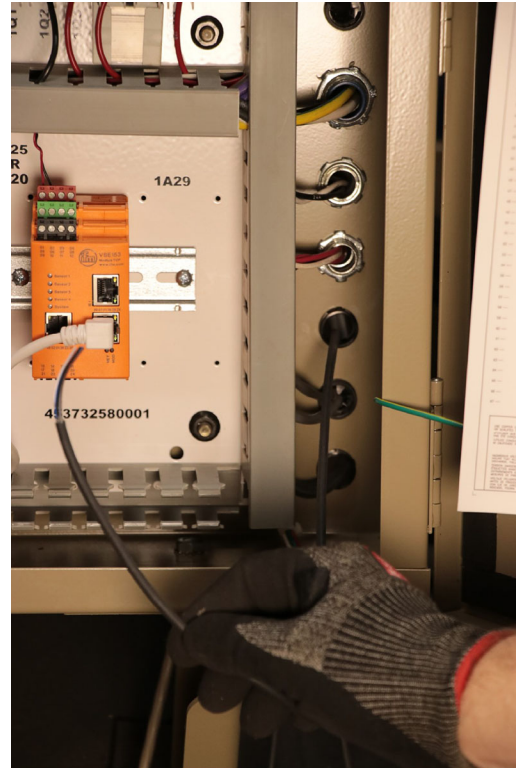
Failure to disconnect power and discharge capacitors before servicing could result in death or serious injury.

Disconnect all electric power, including remote disconnects and discharge all motor start/run capacitors before servicing. Follow proper lockout/tagout procedures to ensure the power cannot be inadvertently energized. For variable frequency drives or other energy storing components provided by Trane or others, refer to the appropriate manufacturer's literature for allowable waiting periods for discharge of capacitors. Verify with a CAT III or IV voltmeter rated per NFPA 70E that all capacitors have discharged.

For additional information regarding the safe discharge of capacitors, see [Discharging Capacitors in HVAC Systems - Service Bulletin](#) (PROD-SVB06-EN).*

Mounting the IFM Controller

1. Confirm the chiller power is off to the control panel.
2. Route the sensor wire into the control panel. See [Figure 22, p. 12](#).

Figure 22. Route sensor wire


The IFM controller mounts on a din rail in a convenient location. Available locations will vary depending on the age of the chiller or if the unit has an AdaptiView control upgrade. The following section describes the possible mounting locations for each panel. The controller can be mounted wherever it is most accessible and convenient for mounting as long as the controller remains vertical for air flow through the controller.

1. Use the provided din rail to mount the IFM controller in the panel on the backplate. The din rail can be cut to the required length for the space available.
2. Mark the location of the din rail mounting holes.

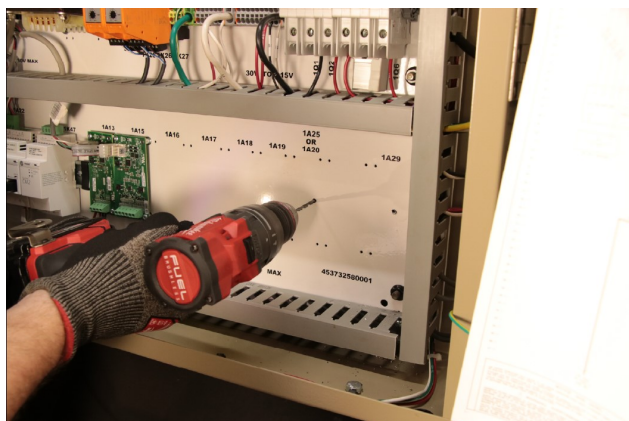
Figure 23. Mark mounting location


Figure 24. Mark mounting location



3. Use a #16 (0.1590-inch) drill bit to pre-drill the holes for the din rail screws. Use the 10-32 self-tapping screws and external tooth lock washers to fasten the din rail to the back plate or side panel.

Figure 25. Pre-drill holes for din rail screws



See the following figures for mounting location options.

Backplate Location

Figure 26. Backplate mounting option

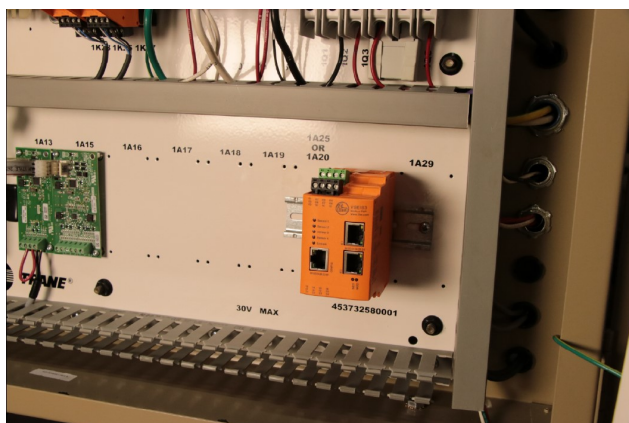
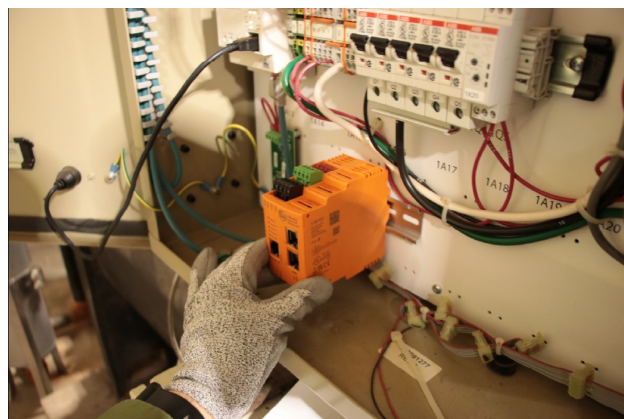


Figure 27. Backplate mounting option

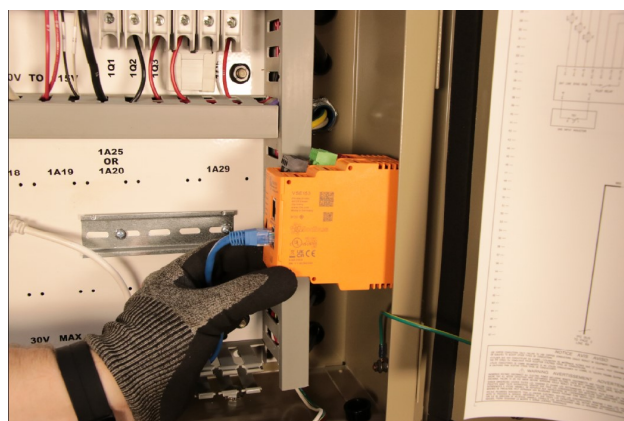


Side Panel Location

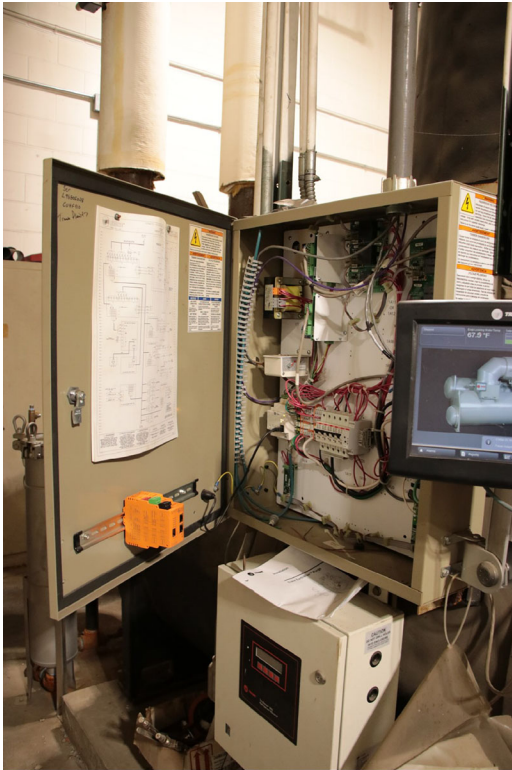
Figure 28. Side panel mounting option



Figure 29. Side panel mounting option



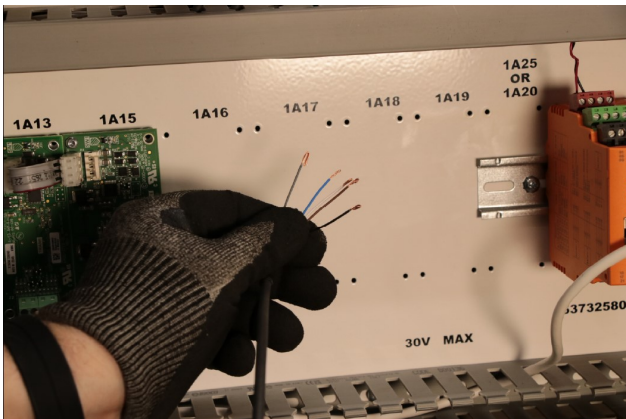
Din Rail Door Mount

Figure 30. Din rail door mounting option


Connecting the Sensor to the IFM Controller

To connect the sensor to the IFM controller (VSM103 signal wire to the VSE163 module), follow the operations below.

1. Cut the sensor cable to length leaving some extra at the panel.
2. Strip the black, blue, brown, grey, and white wires on the sensor cable that is routed to the control panel.

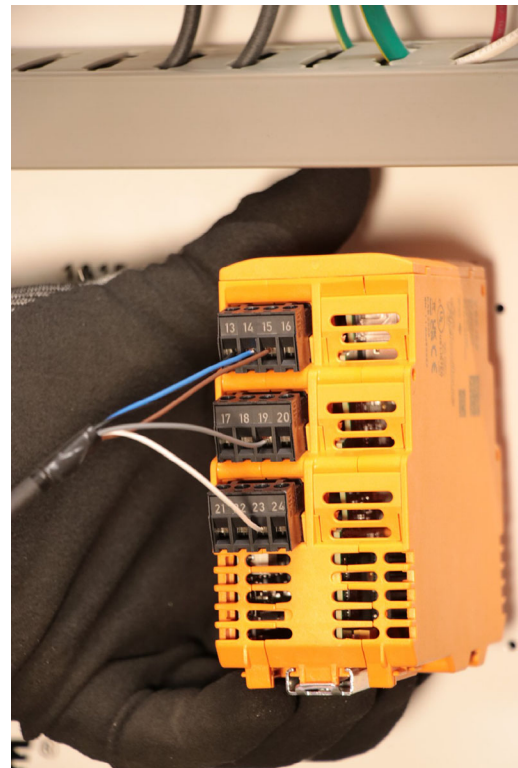
Figure 31. Strip wires


3. Connect the correct wire color to the number terminal on the sensor connections in [Table 4](#), p. 14 below.

Table 4. Wiring options

Cable Color	Signal	VSE163 Terminal
BL Black	Self Test Function (Possible Future Option)	13
BU Blue	GND	14
BN Brown	IEPE X axis	15
GY Grey	IEPE Y axis	19
WH White	IEPE Z axis	23

Figure 32. Fasten wires to terminal

Figure 33. Connect control panel


Notes:

1. *The VSE163 module may be installed at any available location within the control cabinet, provided it is within the allowable cable length.*
2. *SIMPLEX units are equipped with one VSE163 module, while DUPLEX units are equipped with two VSE163 modules.*

Wiring

Table 5. Diagram information

Wiring Diagram Number	Description
5071-3549	CenTraVac Vibration Sensor Schematic

1. Connect the power cord (PN507135460001) of the VSE163 module.

Figure 34. VSE163 terminal diagram

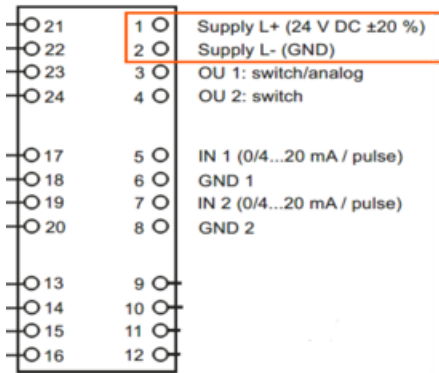
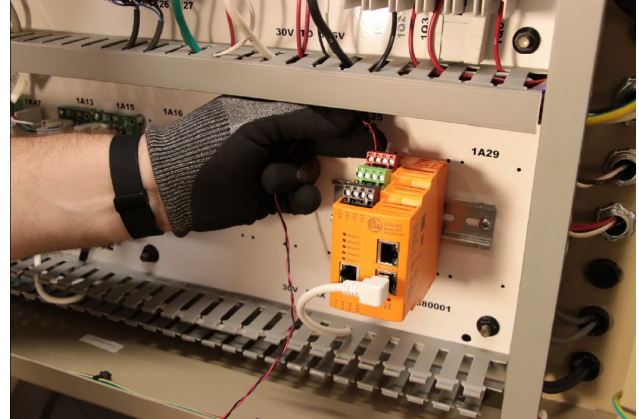


Figure 35. Power module – power cable connected to J5-1 (24Vdc+) and J5-2 (GND)



Figure 36. VSE163 module – power cable connected to terminal 1 (24 Vdc) and terminal 2 (GND)



The Trane Vibration Monitor kit comes with 2 different ethernet cable types – straight connection and 90 connection. For backplate and door mount use the 90 ethernet connection. For side panel mount, use the straight ethernet connection.

Figure 37. 90 ethernet option

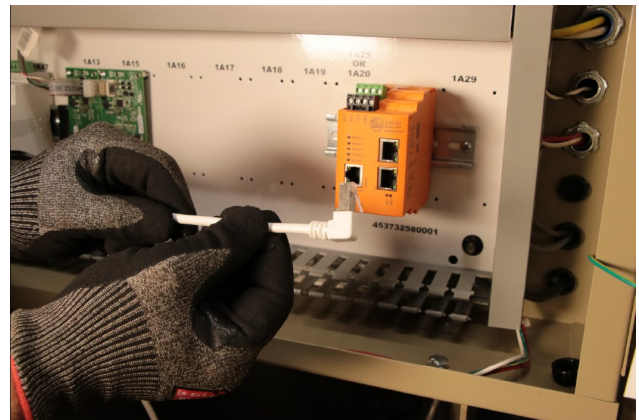


Figure 38. Straight ethernet option



2. Connect the Ethernet cable from the IE2 port of the IFM controller (VSE163) to the CM2 module as shown in the Figure 40, p. 17.

Figure 39. IE2 port

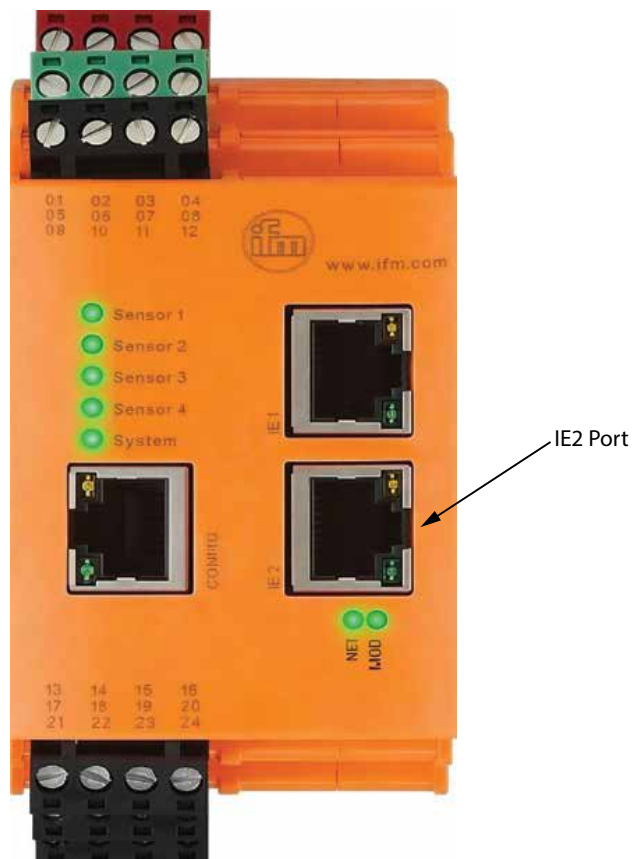


Figure 40. Connected cable



Note: CM2 grounding wire must be connected to the grounding bolt of the control panel.

Figure 41. Connecting ethernet to port

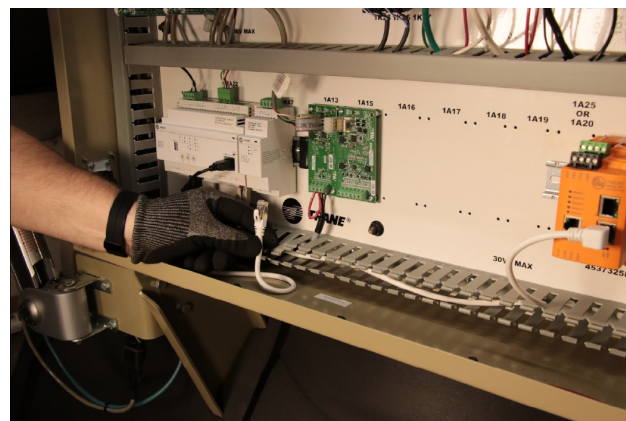


Figure 42. Connect USB cable to CM2



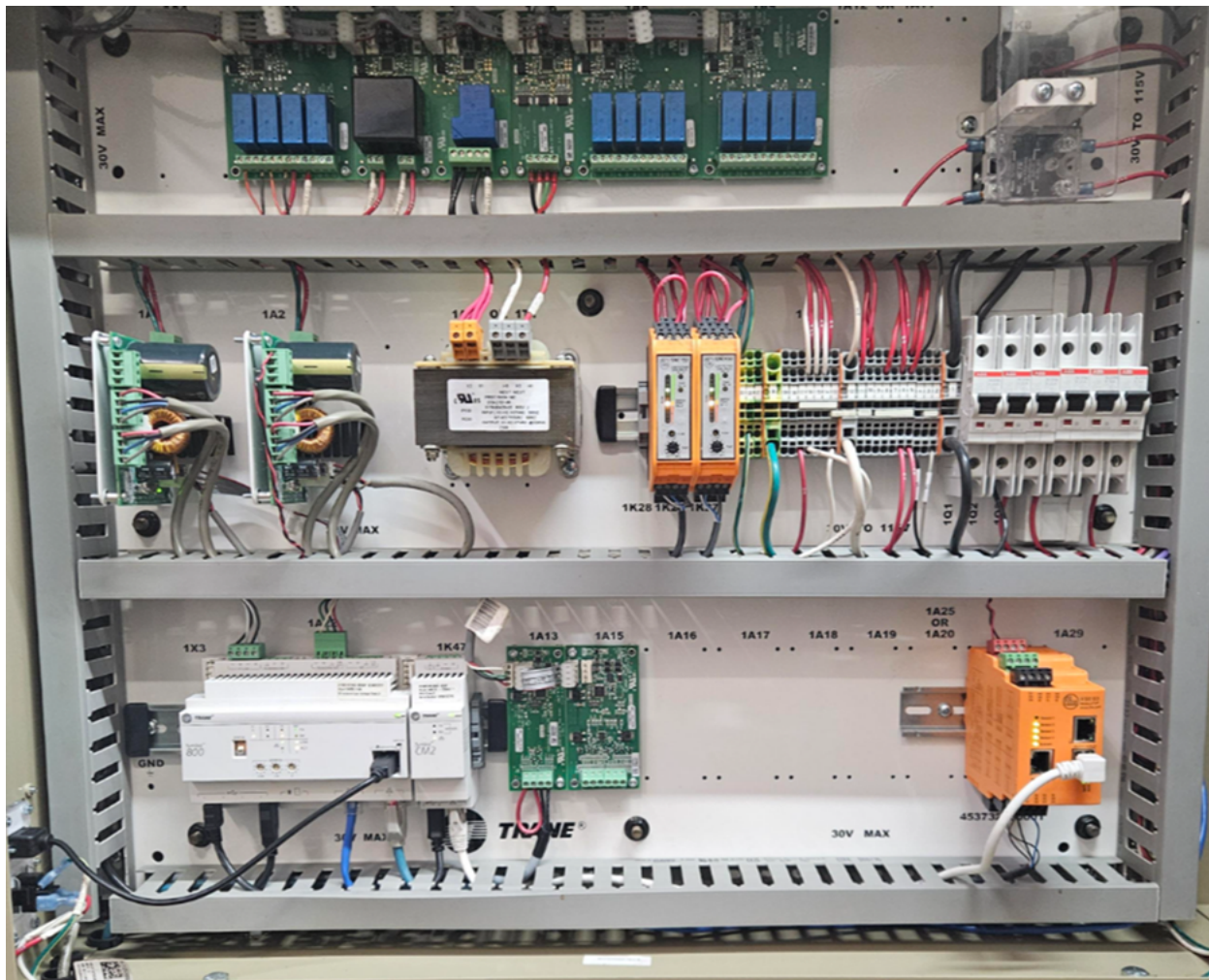
3. Connect the CM2 module and Symbio 800 using a USB cable. Use the USB1 port of Symbio 800 and the USB-C port of CM2 with a USB cable.

Figure 43. USB cable connections



The completed panel should appear as shown below.

Figure 44. Completed panel



Symbio 800 CTV Application Update

1. The CTV application must be at least the version listed below or higher to support Trane Vibration Monitor.

CTV Simplex:

WaterCooledCentrifugal-0728-1-70-0005

2. Using Tracer TU, under the Configuration tab, select **Trane Vibration Monitor** to enable Symbio 800 communication to the IFM VSE module and start data collection.

3. After power is returned to Symbio 800, confirm there is no vibration sensor communication loss diagnostic.

Table 6, p. 19 contains the list of possible vibration monitor-related diagnostics.

Figure 45. Tracer TU interface

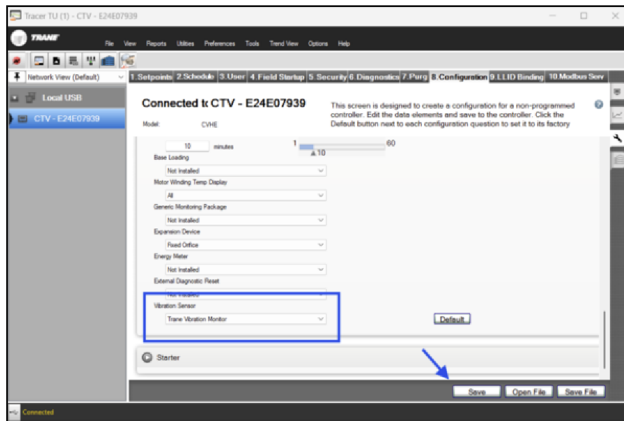


Table 6. Monitor-related diagnostics

Unit Type	Diagnostic Name	Effects Target	Target Severity	Target Persistence	Active Modes [Inactive Modes]	Criteria	Reset Level
Simplex	Comm Loss: Vibration Sensor	Chiller	Warning	Non-latching	All	Continual loss of communication between the MP and the Modbus TCP vibration module has occurred for a 35-40 second period.	Remote
Duplex	Comm Loss: Vibration Sensor	Circuit X	Warning	Non-latching	All	Continual loss of communication between the MP and the Modbus TCP vibration module has occurred for a 35-40 second period.	Remote

Possible causes:

- Communication loss with CM2 (cable connection, IP address)
- Communication loss with IFM Edge Controller (cable connection, IP address)

Indicator Lights

This section describes the seven LED indicators located on the top side of the edge controller. The table below summarizes each LED and the system status it represents.

Symbio 800 CTV Application Update

Table 7. LED indicator lights and system status

Name	Behavior		Description
Sensor 1	OFF		Sensor1 is not available in this application
Sensor2	Solid	Green	X channel is operating normally
		Yellow	X channel is in warning condition
		Red	X channel is in fault condition
	Green flashing		X channel sensor is not connected or faulty
	Green/yellow flash alternately		Teaching process active
	Yellow/red flash alternately		No parameter set loaded
Sensor3	Solid	Green	Y channel is operating normally
		Yellow	Y channel is in warning condition
		Red	Y channel is in fault condition
	Green flashing		Y channel sensor is not connected or faulty
	Green/yellow flash alternately		Teaching process active
	Yellow/red flash alternately		No parameter set loaded
Sensor4	Solid	Green	Z channel is operating normally
		Yellow	Z channel is in warning condition
		Red	Z channel is in fault condition
	Green flashing		Z channel sensor is not connected or faulty
	Green/yellow flash alternately		Teaching process active
	Yellow/red flash alternately		No parameter set loaded
System	Solid	Green	Edge controller is functioning normally
	OFF		Edge controller is not work
NET (Network)	Flashing	Green	No connection has been established, an IP address was assigned (flashing approx. 2 Hz)
	Solid	Green	Device connected to the network
		Red	Error on the fieldbus
	OFF		The device is switched off
MOD (Modbus)	Solid	Green	Device functions reliably (normal operation)
		Red	Device error
	Flashing	Green	Firmware image has been written correctly to the flash (Flashing for 2 s, approx.2 Hz)
		Orange	Parameter set was successfully transferred (Flashing for 2 s, approx.2 Hz)
		Orange	Firmware image is loaded to the RAM/flash
	OFF		Device is switched off (no voltage supply)
IE1/IE2	Green	ON	Connection present at port 1/2
		OFF	Connection does not present at port 1/2
	Yellow	Flash	Data transfer at port 1/2
		OFF	No data transmission at port 1/2 Device functions normal operation



Connectivity Tool

Use this connectivity tool to quickly see your CMSA connection options: [Connected Mechanical Service Agreement \(CMSA\) Connectivity Decision Tool](#)

Overview

This document explains connectivity options for connecting equipment to the Trane cloud as part of a Connected Mechanical Service Agreement (CMSA).

Key considerations include:

- Which unit controls are supported
- How the customer site will connect to the Trane cloud
- What licensing is required
- How to set up a site in Trane Connect and confirm cloud communication

If you need help evaluating connection options or getting started, contact your local CMSA expert, local controls partners, or the CMSA Commercialization Team.

Supported Chiller Unit Controls

The following chiller unit controllers are supported as part of a CMSA agreement. This applies to CenTraVac, Air-Cooled and Water-Cooled Screw Chillers, and CGAM models.

Upgrade kits to Symbio 800 for many chillers with older controls are available.

Symbio 800

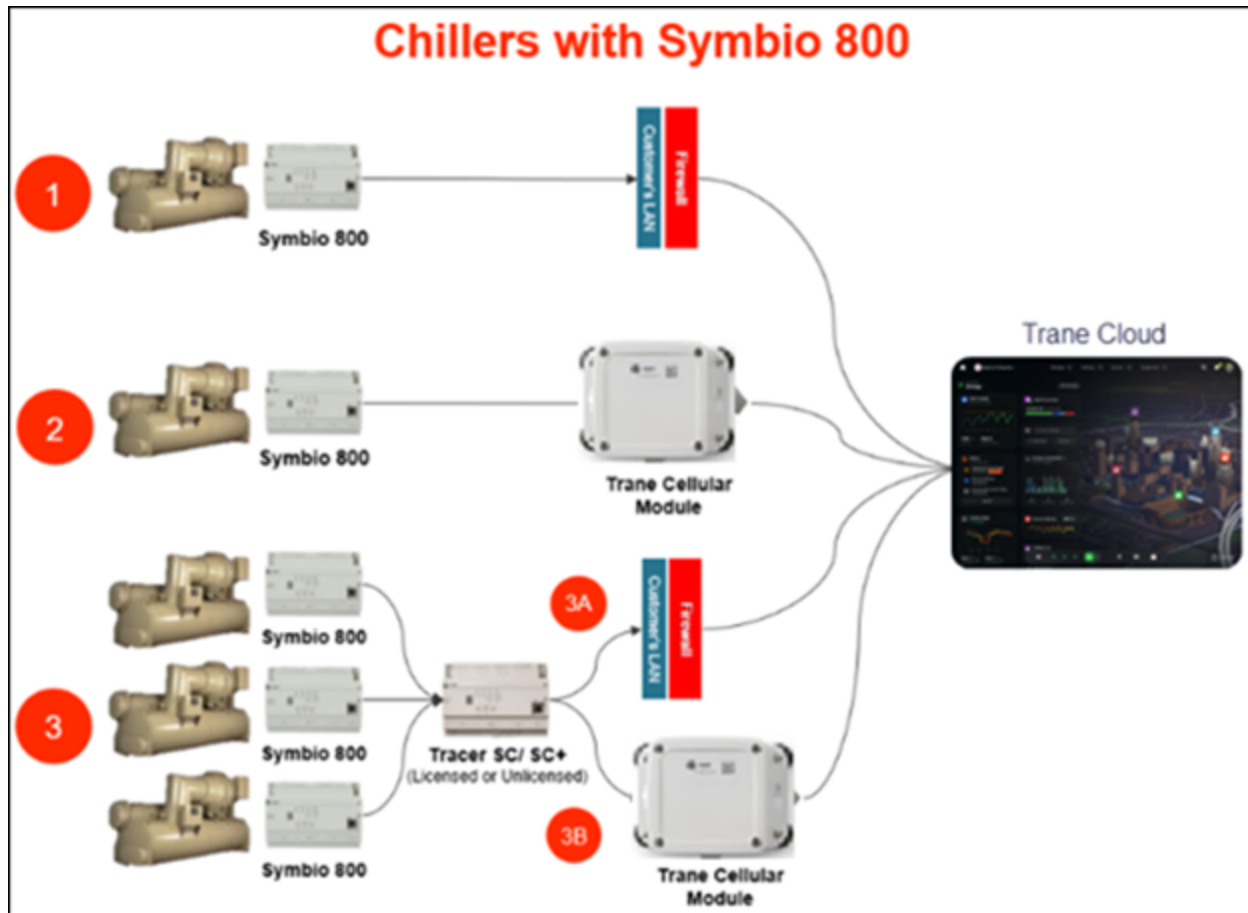
This option supports both direct connection and connection through a Tracer SC+ building controller to the Trane cloud.

- Direct connection with Symbio 800 is recommended when a competitive building automation system, such as JCI Metasys or Siemens Desigo/Apogee, is in place, because it does not interfere with existing system communication.
- Symbio 800 direct connection through the cellular module is currently supported only in the United States. Teams in Canada and other regions will need to explore alternative solutions until that changes.
- Work with your local connectivity or IS experts to identify the best solution, or contact the CMSA Commercialization Team for support.
- Upgrade kits to Symbio 800 are available for many chillers with older controls.

Connect to Trane Cloud – Symbio 800

The diagram below provides an overview of the available options for connecting to the Trane cloud. Each option highlighted in the red circle is explained in more detail below.

Figure 46. Options for connecting to the Trane cloud



Option 1: Directly Connect to Customer Network

Symbio 800 supports direct connection to a customer local area network (LAN) using the following:

- Ethernet cable
- Wi-Fi dongle

For more information, see the [Symbio 800 IOM](#).

Option 2: Direct Connection through Trane GEO TAB Module

Symbio 800 can connect directly to the Trane GEO TAB module without requiring a building automation system (BAS).

This option is recommended when a competitive building automation system, such as JCI Metasys or Siemens Desigo/Apogee, is already in place, because the direct connection to Symbio 800 does not interfere with existing system communications.

- Symbio 800 direct connection through the **GEO TAB cellular module is currently supported only in the United States and Canada**. Other regions will need to explore alternative solutions until this changes.

- Work with your local connectivity or IS experts to identify the best solution, or contact the CMSA Commercialization Team for support.
- Verify the firmware is upgraded to the latest version.

For more information, visit [Trane USB Cellular Module Setup for Symbio 800](#).

Option 3: Connection through Tracer SC+

Unit controllers can connect to a Tracer SC+ building automation controller in several ways, including BACnet IP, BACnet MS/TP, and LonTalk. This option is typically recommended when a Tracer SC+ is already in place or when multiple chillers need to be connected to the Trane cloud.

Option 3A: Tracer SC+ through Ethernet or Wi-Fi Dongle

Tracer SC+ can connect directly to a customer's local area network (LAN) using:

- Ethernet cable
- Wi-Fi dongle

For more information, see the [Tracer SC+ System Controller IOM](#).

Option 3B: Tracer SC+ through Trane Cellular Module (GEO TAB)

Tracer SC+ also supports direct connection through the Trane Cellular Module (GEO TAB). For more information, see the [Trane USB Cellular Module Setup for Tracer SC+](#).

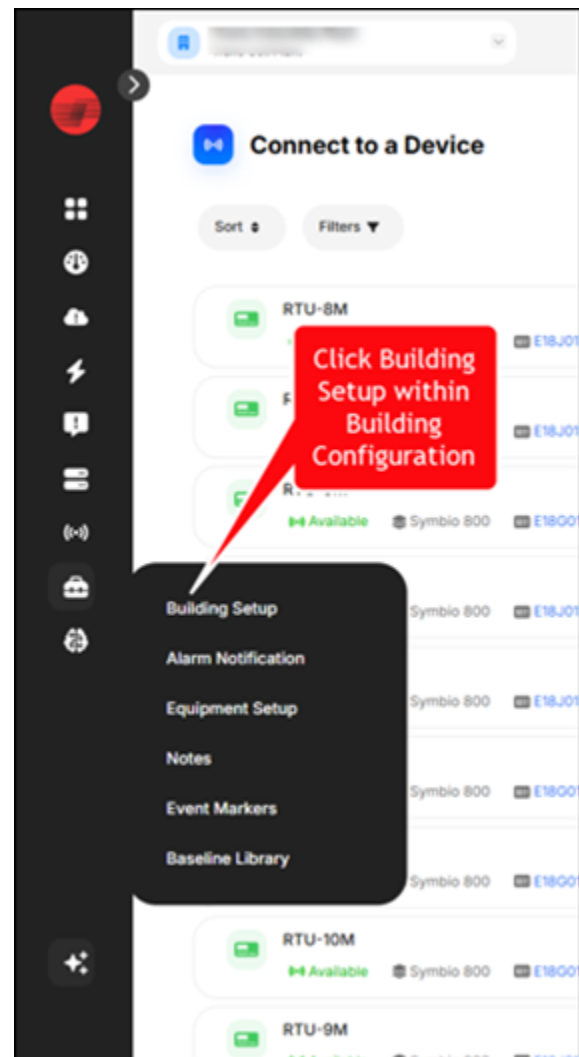
- The GEO TAB cellular module is currently supported only in the United States and Canada. Other regions will need to explore alternative solutions until this changes.
- Work with your local connectivity or IS experts to identify the best solution, or contact the CMSA Commercialization Team for support.

Setting Up the Site in Trane Connect

Both Tracer SC+ and Symbio 800 can be set up as sites in Trane Connect, creating a site tile in Command Center. Instructions for doing so are provided below.

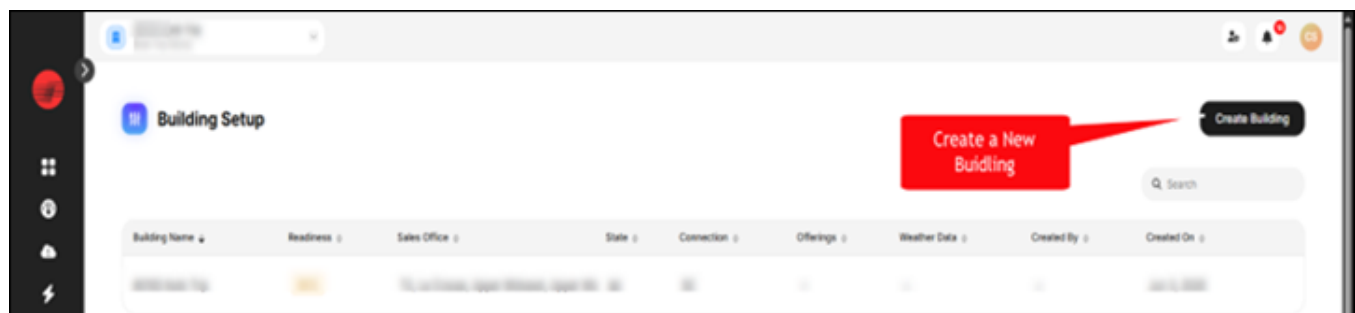
1. Navigate to [Trane Connect](#) and visit the **Building Setup** page.

Figure 47. Navigate to building setup



2. Click **Create Building**.

Figure 48. Create a new building



3. To complete the building setup page:
 - a. Enter a building name.
 - Use a unique, easily identifiable name.
 - b. Enter site and account information.
 - Confirm that the name is meaningful to both the customer and your office.
 - This information must match what is entered in CRM.

- If it does not match CRM, the Digital Inspection Toolbox subscription may be returned, which can delay CMSA connection setup.

c. Configure the devices.

Enter the controller connection type based on the option you are using, as described earlier in this document.

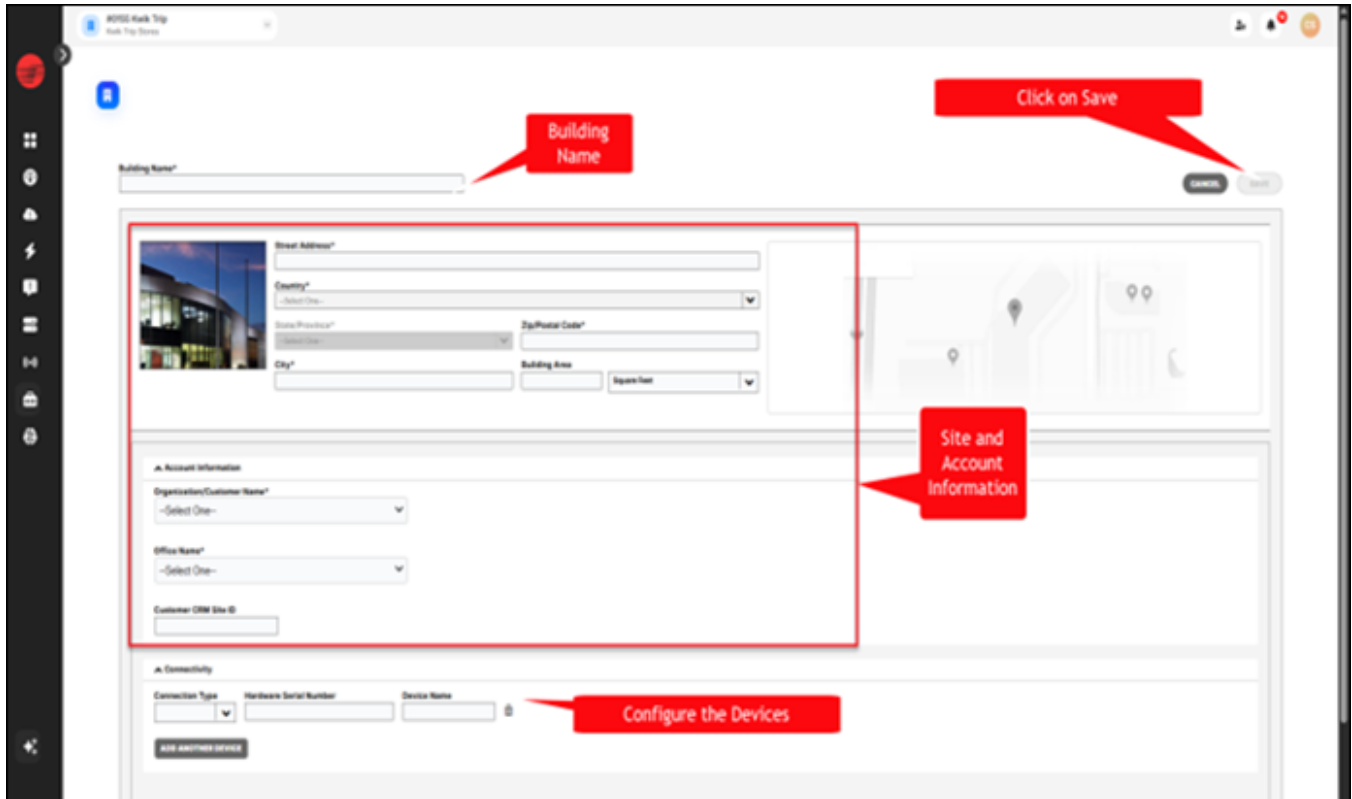
Notes:

- *Both Symbio 800 and Tracer SC+ can be connected to the cloud.*
- *If multiple devices are on site, select **Add Another Device** as needed*

d. Click **Save**.

Once saved, the site should appear correctly in both Command Center and Trane Connect.

Figure 49. Building name, site and account information, configure devices



The screenshot shows the Trane Connectivity Tool interface. Red callouts highlight the following sections:

- Building Name:** A text input field at the top left.
- Site and Account Information:** A section containing fields for Street Address, Country, State/Province, Zip/Postal Code, City, Building Area, and Square Foot. Below this is the Account Information section with Organization/Customer Name, Office Name, and Customer CRM Site ID.
- Configure the Devices:** A section at the bottom with fields for Connection Type, Hardware Serial Number, and Device Name, along with an "ADD ANOTHER DEVICE" button.
- Click on Save:** A callout pointing to the "Save" button in the top right corner.

Finalizing and Testing SC +/-Symbio 800 Connection to Cloud

Now that the cloud connection is configured, go to the SC+ or Symbio 800 to complete device setup for cloud

connectivity and test the connection. See the images below for details.

Figure 50. Enable options

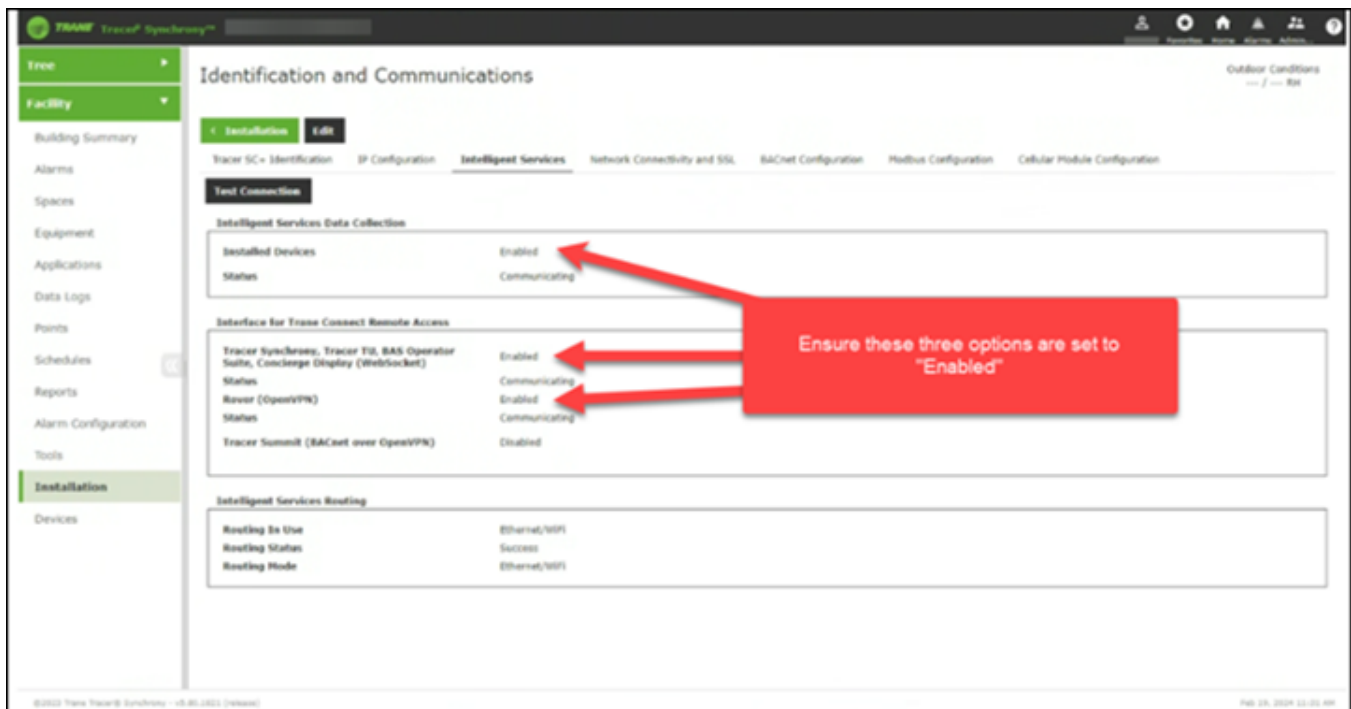
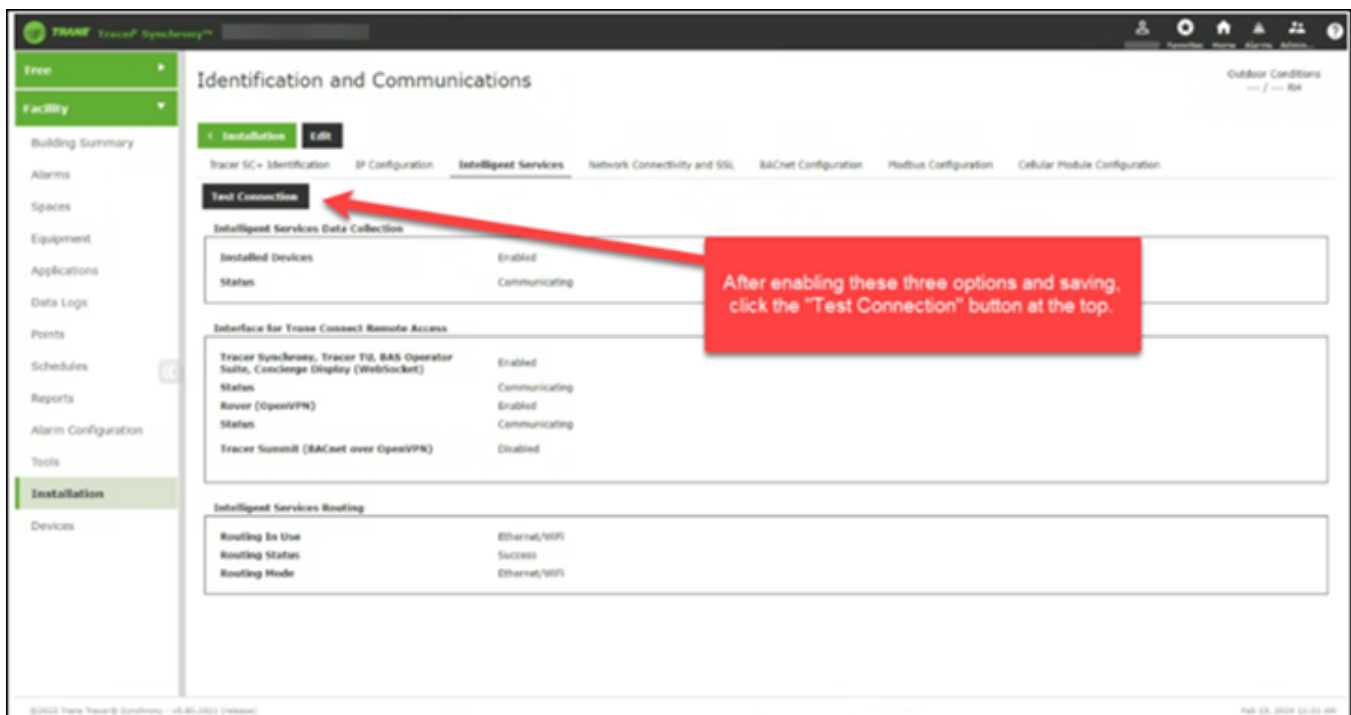


Figure 51. Click to test connection



If you continue to experience issues connecting the SC+ to Trane Connect, additional configuration may be required. Refer to the HUB page below for further guidance on completing the device connection: <https://hub.tranetechnologies.com/docs/DOC-154042>.

Maintenance

During annual chiller maintenance, verify that the vibration sensor mounting is secure and is not loose. No other maintenance is required.

Table 8. Failure modes

Number	Register X-axis	Register Y-axis	Register Z-axis	Boundary (Hz)	Potential Failure Mode
1	Comp Vibration 15-Mins 1X Max Velocity	Comp Vibration 15-Mins 1Y Max Velocity	Comp Vibration 15-Mins 1Z Max Velocity	25-65	1. Loss of thrust bearing preload 2. Motor eccentricity 3. Operating imbalance
2	Comp Vibration 15-Mins 2X Max Velocity	Comp Vibration 15-Mins 2Y Max Velocity	Comp Vibration 15-Mins 2Z Max Velocity	66-94	Ball spin error
3	Comp Vibration 15-Mins 3X Max Velocity	Comp Vibration 15-Mins 3Y Max Velocity	Comp Vibration 15-Mins 3Z Max Velocity	95-125	1. Bearing misalignment 2. Motor eccentricity 3. Electrical or line issues
4	Comp Vibration 15-Mins 4X Max Velocity	Comp Vibration 15-Mins 4Y Max Velocity	Comp Vibration 15-Mins 4Z Max Velocity	126-149	—
5	Comp Vibration 15-Mins 5X Max Velocity	Comp Vibration 15-Mins 5Y Max Velocity	Comp Vibration 15-Mins 5Z Max Velocity	150-500	Internal bearing damage
6	Comp Vibration 15-Mins 6X Max Velocity	Comp Vibration 15-Mins 6Y Max Velocity	Comp Vibration 15-Mins 6Z Max Velocity	501-900	Outer race clamping or distortion (500-600Hz)
7	Comp Vibration 15-Mins 7X Max Velocity	Comp Vibration 15-Mins 7Y Max Velocity	Comp Vibration 15-Mins 7Z Max Velocity	901-1299	Internal bearing damage
8	Comp Vibration 15-Mins 8X Max Velocity	Comp Vibration 15-Mins 8Y Max Velocity	Comp Vibration 15-Mins 8Z Max Velocity	1300-3000	Rotor bar

Note: Failures listed above are for reference and are not guaranteed.

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